

## REMARKS

Applicants respectfully request reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow.

Claim 9 has been canceled.

New claims 15-18 have been added.

This amendment adds, changes and/or deletes claims in this application. A detailed listing of all claims that are, or were, in the application, irrespective of whether the claim(s) remain under examination in the application, is presented, with an appropriate defined status identifier.

After amending the claims as set forth above, claims 1-8 and 10-18 are now pending in this application.

### **Rejection under 35 U.S.C. § 112**

Claims 1-14 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. The claims have been amended to overcome this rejection. Applicants submit that these amendments do not narrow the scope of the claims. Reconsideration and withdrawal of this rejection is respectfully requested.

### **Rejection under 35 U.S.C. § 102**

Claims 1-8, 13, and 14 are rejected under 35 U.S.C. § 102(b) as being anticipated by WO 01/98723 to Groves *et al.* (hereafter "Groves"). This rejection is respectfully traversed.

Groves discloses an exhaust gas cooler that includes an external tubular housing 20, tapered cap portions 25a and 25b, flange plates 26, and coolant passages or tubes 66. See page 8, line 23, to page 9, line 10, of Groves.

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Bros. v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). See generally MPEP § 2131. However, as noted on page 5 of the Office Action, Groves does not disclose a heat exchanger, "wherein the housing is in a shape of a bone when viewed in longitudinal section or in a shape that is approximated to a bone shape," as recited in amended claim 1.

Therefore, Groves does not anticipate claim 1. Claims 2-8, 13, and 14 depend from claim 1. Reconsideration and withdrawal of this rejection is respectfully requested.

**Rejections under 35 U.S.C. § 103**

Claim 9 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Groves in view of U.S. Patent No. 3,953,176 to Santala *et al.* (hereafter “Santala”). This rejection is respectfully traversed.

Claim 9 has been canceled and the features of claim 9 have been incorporated into amended claim 1. Groves does not teach or suggest a heat exchanger, “wherein the housing is in a shape of a bone when viewed in longitudinal section or in a shape that is approximated to a bone shape,” as recited in amended claim 1.

Santala discloses a catalytic converter that includes a plurality of catalyst sections 12, a device container 16 with inlet and outlet openings 18 for an automotive exhaust gas. See col. 2, line 65, to col. 3, line 21, of Santala. Santala also discloses an embodiment of a catalytic converter 48 that includes double-tapered pleats 50 and flutings 52. See col. 6, lines 41-52, and Figures 7 and 8 of Santala. However, the catalytic converter of Santala is configured to process only a single medium, namely an automotive exhaust gas.

It would not have been obvious to one of ordinary skill in the art to modify the device of Groves by the teachings of Santala to provide the heat exchanger of claim 1. The catalytic converter of Santala does not include collecting vessels for a first medium and a housing configured to conduct a second medium. Instead, the catalytic converter of Santala is only designed to process a single automotive exhaust gas. One of ordinary skill in the art would not have looked to the teachings of Santala when considering changes to the design of the device of Groves because of the differences between the catalytic converter of Santala and the devices of Groves and claim 1. Therefore, it would not have been obvious to one of ordinary skill in the art to combine the teachings of Groves and Santala to provide the heat exchanger of claim 1. Thus, one of ordinary skill in the art would have been left with only the teachings of Groves. A basic requirement of a *prima facie* case of obviousness is that a prior art reference, or prior art references when combined, must teach or suggest all of the claim limitations. See M.P.E.P. §§ 2143, 2143.03. Claim 1 is not unpatentable over Groves

because Groves does not disclose or suggest all of the features of claim 1. Reconsideration and withdrawal of this rejection is respectfully requested.

Claim 10 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Groves in view of U.S. Pub. No. 2003/0010479 to Hayashi *et al.* (hereafter "Hayashi"). This rejection is respectfully traversed. Hayashi does not remedy the deficiencies of Groves discussed above in regard to independent claim 1, from which claim 10 depends. Withdrawal of this rejection is respectfully requested.

Claim 11 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Groves in view of U.S. Patent No. 6,659,170 to Kale (hereafter "Kale"). This rejection is respectfully traversed. Kale does not remedy the deficiencies of Groves discussed above in regard to independent claim 1, from which claim 11 depends. Withdrawal of this rejection is respectfully requested.

Claim 12 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Groves in view of FR 2 605 685 to Gautelli *et al.* (hereafter "Gautelli"). This rejection is respectfully traversed. Gautelli does not remedy the deficiencies of Groves discussed above in regard to independent claim 1, from which claim 12 depends. Withdrawal of this rejection is respectfully requested.

#### **New Claims**

New claims 15-18 have been added. Claims 15-18 depend from claim 1 and are allowable over the prior art for at least the reasons discussed above and for their respective additional recitations.

In particular, claims 17 and 18 recite, among other things, that the heat exchanger is configured so that the second medium has a laminar flow or flows in a laminar fashion. Groves discloses that the passages or tubes 66 are formed by plates 49, 50 that form a criss-cross pattern of diagonal grooves or ribs 62, 63. Page 10, lines 21-27. Groves teaches that the ribs or grooves 62, 63 increase the turbulence of gas inside and outside of the tube 66, which benefits the performance of the exhaust gas cooler. See page 11, lines 1-4.

Santala discloses that catalyst sections 12 include catalyst strip materials 28 that form obliquely intersecting passages 34 with continuously varying cross-sections. See col. 4, line 65, to col. 5, line 11, of Santala. The continuously varying cross-sections of the passages 34

provides turbulence to prevent or avoid laminar flow of exhaust gases through the catalyst sections, a condition in which some of the exhaust gas may not come into contact with the catalyst in the sections 12. See col. 1, lines 53-65; col. 5, lines 8-21, of Santala.

Therefore, both Groves and Santala teach against configurations that provide laminar flow of a medium. Applicants respectfully submit that claims 17 and 18 are allowable over the prior art.

### Conclusion

Applicants submit that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check or credit card payment form being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

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By 

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